

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/672,363 : Confirmation No.: 3026
 Applicant : John W. Miller
 Filed : 26 September 2003
 For : BLOWING AGENT ENHANCERS FOR POLYURETHANE FOAM PRODUCTION

Art Unit : 1796
 Examiner : John M. Cooney

Docket No. : 06459 USA (APC-3007US)
 Customer No. : 23543

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Commissioner for Patents
 P.O. Box 1450
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RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Sir:

The following is responsive to the Notification of Non-Compliant Appeal Brief dated 21 January 2009:

- ☒ A *1 month* extension of time is requested and authorization to charge the Account of assignee is provided in an enclosed form.
- ☐ **Amendments to the Specification** begin on page _____ of this paper.
- ☒ **Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.
- ☐ **Amendments to the Drawings** begin on page _____ of this paper and include an attached replacement sheet(s).
- ☐ **Amendments to the Abstract** are on page _____ of this paper. A clean version of the Abstract is enclosed.
- ☒ **Remarks/Arguments** begin on page 7 of this paper.

Listing Of Claims

1. (Previously Presented) A composition for producing a polyurethane foam, the composition comprising a polyol, a polyisocyanate, a blowing agent comprising a hydrohalocarbon, and at least 4 pphp of a blowing agent enhancer comprising at least one compound selected from the group consisting of ethylene glycol monomethyl ether, ethylene glycol monobutyl ether, ethylene glycol phenyl ether, diethylene glycol monomethyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol dimethyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monopropyl ether, dipropylene glycol monobutyl ether, tripropylene glycol monopropyl ether, tripropylene glycol monobutyl ether, or a mixture of any of these.

2. (Withdrawn) A composition for producing a polyurethane foam, the composition comprising a polyol, a polyisocyanate, a blowing agent comprising a hydrohalocarbon, and a blowing agent enhancer comprising at least one compound having no hydroxyl groups and having a molecular weight less than about 500 g/mol and a molecular formula of $\text{RO}-(\text{CH}_2\text{CHR}''\text{O})_n-\text{R}'$; wherein:

R is selected from the group consisting of C1-C10 aliphatic groups, C5-C10 cycloaliphatic groups, C7-C10 araliphatic groups, C1-C10 aliphatic groups comprising a nitrogen atom or oxygen atom, C5-C10 cycloaliphatic groups comprising a nitrogen atom or oxygen atom, and C7-C10 araliphatic groups comprising a nitrogen atom or oxygen atom;

R' is selected from the group consisting of R, acetyl, propionyl, and butyryl, provided that R' is not a C1-C10 aliphatic group;

R'' is hydrogen or a C1-C5 alkyl group; and

n is an integer greater than or equal to 1.

3. (Withdrawn) The composition of claim 2, wherein R'' is hydrogen or methyl.

4. (Withdrawn) The composition of claim 1, wherein the at least one compound comprises dipropylene glycol dimethyl ether.

5. (Withdrawn) The composition of claim 1, wherein the at least one compound comprises propylene glycol monomethyl ether, propylene glycol monopropyl ether, propylene glycol monobutyl ether, or a mixture of any of these.

6. (Previously Presented) The composition of claim 1, wherein the at least one compound comprises ethylene glycol monobutyl ether.

7. (Original) The composition of claim 1, wherein the hydrohalocarbon comprises at least one fluorine atom per molecule.

8. (Original) The composition of claim 1, wherein the blowing agent comprises HCFC-123, HCFC-141b, HCFC-22, HCFC-142b, HFC-134a, HFC-245fa, HFC-245ca, HFC-236ea, HFC-365mfc, or a mixture of any of these.

9. (Original) The composition of claim 1, wherein the blowing agent comprises HCFC-141b, HFC-134a, HFC-245fa, or a mixture of any of these.

10. (Original) The composition of claim 1, wherein the blowing agent comprises a C1-C4 hydrofluorocarbon having a molecular weight between 50 and 170 g/mol, a boiling point between -60°C and 50°C, and an Ozone Depletion Potential less than 0.10.

11. (Original) The composition of claim 1, wherein the blowing agent comprises HFC-134a, HFC-236ea, HFC-365mfc, HFC-245fa, or a mixture of any of these.

12. (Original) The composition of claim 1, wherein the blowing agent comprises HFC-245fa.

13. (Original) The composition of claim 1, additionally comprising a catalyst.

14. (Original) The composition of claim 1, additionally comprising a surfactant.

15. (Previously Presented) A composition for producing a polyurethane foam, the composition comprising a polyol, a polyisocyanate, HFC-245fa, and at least 4 pphp in total of one or both of ethylene glycol monobutyl ether and dipropylene glycol dimethyl ether.

16. (Previously Presented) A method of making a polyurethane foam, the method comprising combining a polyol and a polyisocyanate in the presence of 1) a blowing agent comprising a hydrohalocarbon and 2) at least 4 pphp of a blowing agent enhancer comprising at least one compound selected from the group consisting of ethylene glycol monomethyl ether, ethylene glycol monobutyl ether, ethylene glycol phenyl ether, diethylene glycol monomethyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol dimethyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monopropyl ether, dipropylene glycol monobutyl ether, tripropylene glycol monopropyl ether, tripropylene glycol monobutyl ether.

17. (Original) The method of claim 16, wherein the hydrohalocarbon comprises at least one fluorine atom per molecule.

18. (Withdrawn) A composition for producing a polyurethane foam, the composition comprising a polyol, a polyisocyanate, a blowing agent comprising a hydrohalocarbon, and a blowing agent enhancer comprising at least one compound having a molecular weight less than about 500 g/mol and a molecular formula ROH, wherein:

R is selected from the group consisting of methyl, ethyl, pentyl isomers, hexyl isomers, heptyl isomers, octyl isomers, nonyl isomers, decyl isomers, C5-C10 cycloaliphatic groups, and C7-C10 araliphatic groups.

19. (Withdrawn) The composition of claim 18, wherein the hydrohalocarbon comprises at least one fluorine atom per molecule.

20. (Withdrawn) The composition of claim 18, wherein the at least one compound is selected from the group consisting of methanol, ethanol, isomers of pentanol, isomers of hexanol, isomers of heptanol, isomers of octanol, isomers of nonanol, isomers of decanol, and mixtures of any of these.

21. (Previously Presented) A polyurethane composition comprising a product of a reaction between a polyol and a polyisocyanate, the reaction taking place in the presence of 1) a blowing agent comprising a hydrohalocarbon and 2) at least 4 pphp of a blowing agent enhancer selected from the group consisting of ethylene glycol monomethyl ether, ethylene glycol monobutyl ether, ethylene glycol phenyl ether, diethylene glycol monomethyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol dimethyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monopropyl ether, dipropylene glycol monobutyl ether, tripropylene glycol monopropyl ether, tripropylene glycol monobutyl ether.

22. (Previously Presented) A composition for producing a polyurethane foam, the composition comprising 1) one but not both of a polyol and a polyisocyanate, 2) a blowing agent comprising a hydrohalocarbon and 3) a blowing agent enhancer comprising at least one compound selected from the group consisting of ethylene glycol monomethyl ether, ethylene glycol monobutyl ether, ethylene glycol phenyl ether, diethylene glycol monomethyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol

dimethyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monopropyl ether, dipropylene glycol monobutyl ether, tripropylene glycol monopropyl ether, tripropylene glycol monobutyl ether, wherein at least 4 pphp of the blowing agent enhancer is present if said one but not both of a polyol and a polyisocyanate is a polyol.

23. (Original) The composition of claim 22, wherein the hydrohalocarbon comprises at least one fluorine atom per molecule.

24. (Currently Amended) A composition for producing a polyurethane foam, the composition comprising a polyol, a polyisocyanate, a blowing agent comprising a hydrohalocarbon, and at least 4 pphp of a blowing agent enhancer comprising at least one compound selected from the group consisting of ethylene glycol monomethyl ether, ethylene glycol monobutyl ether, ethylene glycol phenyl ether, diethylene glycol monomethyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, propylene glycol monopropyl ether, propylene glycol monobutyl ether, dipropylene glycol dimethyl ether, dipropylene glycol monomethyl ether, dipropylene glycol monopropyl ether, dipropylene glycol monobutyl ether, tripropylene glycol monopropyl ether, tripropylene glycol monobutyl ether and compounds having a molecular weight less than about 500 g/mol and a molecular formula of ROH; wherein:

R is selected from the group consisting of methyl, ethyl, pentyl isomers, hexyl isomers, heptyl isomers, octyl isomers, nonyl isomers, decyl isomers, C5-C10 cycloaliphatic groups, C7-C10 araliphatic groups, C1-C10 aliphatic groups comprising a nitrogen atom or oxygen atom, C5-C10 cycloaliphatic groups comprising a nitrogen atom or oxygen atom, and C7-C10 araliphatic groups comprising a nitrogen atom or oxygen atom.

25. (Previously Presented) The composition of claim 1 comprising at least 5 pphp of the blowing agent enhancer.

26. (Previously Presented) The composition of claim 15 comprising at least 5 pphp in total of the blowing agent enhancer.

27. (Previously Presented) The method of claim 16 wherein the blowing agent enhancer is present in an amount of at least 5 pphp.

28. (Previously Presented) The composition of claim 21 wherein the reaction takes place in the presence of at least 5 pphp of the blowing agent enhancer.

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29. (Previously Presented) The composition of claim 22 wherein the blowing agent enhancer is present in an amount of at least 5 pphp.

30. (Previously Presented) The composition of claim 24 comprising at least 5 pphp of the blowing agent enhancer.

Remarks/Arguments:

The Appeal Brief filed on 12 January 2007 is held defective, as indicated in the Notification of Non-Compliant Appeal Brief mailed 21 January 2009. The Notification states that claim 24 of the Appeal Brief is not consistent with last amended claim 24. This is not correct; claim 24 is as it appeared in Applicant's response filed 18 April 2006, upon which the Final Office Action dated 27 June 2006 was based. This was confirmed in a telephone conversation between the Examiner and Applicant's representative, Frank Tise, on 23 February 2009. The Examiner indicated that the version of claim 24 that he considered in the Final Office Action was indeed the same as that shown in the Appeal Brief. Thus, the claims in the Appeal Brief are the correct ones.

As a result of a conversation between Frank Tise and Specialist Sharmalla Coates, Applicant understands that the reason for the Notification of Non-Compliant Appeal Brief is not that claim 24 differs between the Appeal Brief and the claim as examined, but rather that the version of claim 24 under examination/appeal represents additional claim elements relative to claim 24 as filed in an earlier response dated 22 December 2004, elements whose addition had not been properly annotated by underlining. The Examiner has subsequently indicated in a voice mail to Frank Tise on 5 March 2009 that Applicant should file an Amendment after Appeal in which claim 24 is shown with the appropriate underlining of the previously-added elements, with the resulting claim being identical (but for the underlining) with claim 24 as it appears in the Appeal Brief (and indeed as it appeared at the time of the Final Office Action). The Examiner indicated that he would enter the amendment, which presents the same claims as he had considered in the Final Office Action, and that the application would then proceed to appeal. Applicant therefore provides the present response, and respectfully requests that it be entered and the Appeal progressed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael Leach", written in a cursive style.

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